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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/655,956 | 09/05/2003 | Jerry Lynn Davis | | 8917 |

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| EXAMINER | |
|---|---|
| HOUSE, LETORIA G | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3672 | |

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/655,956 | DAVIS ET AL. | |
| | Examiner | Art Unit | |
| | Letoria House | 3672 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3 and 5-12 is/are rejected.

7)☒ Claim(s) 4 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09/05/03 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 04202005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: (28) "threaded connection" on page 7, line 14 of the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 5-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kirk et al. (U.S. Patent 6,401,820).

With regard to claim 1, Kirk et al. teaches hollow tubular member (Figure 2, item 32) having first and second ends, the first end threaded for connection to the tubing string (Item 32); at least one primary jet orifice (Items 50, 52), leading from the tubular member interior at the second end and directed toward the bottom of the well; and a plurality of secondary jet orifices arranged around the exterior of the tubular member (Item 68), leading from the tubular member interior and directed upwardly at an acute angle with respect to the longitudinal axis of the tubular member and skewed radially at an angle with respect to a radius of the tubular member surface (item 68), wherein the aggregate cross-sectional area of the secondary jet orifices is at least one and one-half times, but not more than four times, the aggregate cross-sectional area of the at least one primary jet orifice. (Items 50, 52 and 68; column 7, lines 25-30).

With regard to claim 2, Kirk et al. teaches the apparatus wherein the secondary jets are skewed at an angle opposed to the thread direction, so that jet reaction forces tend to tighten the threaded connection. (Item 68; column 5, lines 43-45; column 7, lines 25-30).

With regard to claim 3, Kirk et al. teaches the apparatus of claim 1 wherein the primary jet is mounted for rotation with respect to the hollow tubular member. (Items 50, 52, 32; column 7, lines 56-63).

With regard to claim 5, Kirk et al. teaches the apparatus of claim 3 wherein the primary jet is driven to rotate by the fluid flow there through (Items 50, 52).

With regard to claim 6, Kirk et al. teaches the apparatus of claim 3 wherein the primary jet is driven to rotate by fluid flow contacting inclined vanes (Items 68, 72).

With regard to claim 7, Kirk et al. teaches the apparatus of claim 3 wherein the primary jet is driven to rotate by fluid flow through one or more of the inclined orifices. (Items 32, 50, 52).

With regard to claim 8, Kirk et al. teaches that in order to clean or flush a well using the apparatus the following steps must be performed: connecting a tubing string to a pressurized fluid source at the ground surface; running the string downhole; loosening and agitating undesirable material below the downhole end of the string with a primary flow of downwardly directed fluid; entraining and pulling the undesirable materials upward with a low pressure zone created above the primary flow source by an upwardly directed secondary gaseous flow, one and one-half to four times greater than the primary flow; and carrying the entrained materials to the surface with the combined primary and secondary fluid flows. (Items 50, 52 and 68; column 1, lines 37-42; column 7, lines 25-30)

With regard to claim 9, Kirk et al. teaches the method of claim 8 and further comprising the step of rotating the downwardly directed primary jet flow. (Items 50, 52, 32; Column 1, lines 43-51; column 7, lines 60-63).

With regard to claim 11, Kirk et al. teaches the method of claim 8 where in the fluid flow is liquid in nature. (Column 5, lines 56-58; column 7, lines 25-30)

With regard to claims 10 and 12 the term "fluid" of Kirk et al. is interpreted to include fluids of gaseous or of a liquid-gas mix, and therefore Kirk et al. teaches the method of claim 8 wherein the fluid flow is gaseous in nature as in claim 10 or the fluid is of a

gaseous liquid nature as in claim 12. (See Merriam-Webster's Collegiate Dictionary, Tenth Edition (1993) (defining "fluid" as a liquid or gaseous substance)).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Clemens et al. (U.S. 5,195,585). Note figure 1, column 2, lines 10-54.

With regard to claim 1, Clemens et al. teaches an apparatus (10) comprising a hollow tubular member (14) having first and second ends, the first end threaded for connection to the tubing string; at least one primary jet orifice (52), leading from the tubular member interior at the second end and directed toward the bottom of the well; and a plurality of secondary jet orifices (44) arranged around the exterior of the tubular member; leading from the tubular member interior and directed upwardly at an acute angle with respect to the longitudinal axis of the tubular member and skewed radially at an angle with respect to a radius of the tubular member surface, wherein the aggregate cross-sectional area of the secondary jet orifices is at least one and one-half times, but not more than four times the aggregate cross-sectional area of the at least one primary jet orifice. (Column 5, lines 1-10 and 33-42).

With regard to claim 2, Clemens et al. teaches the apparatus of claim 1 wherein the secondary jets (44) are skewed at an angle opposed to the thread direction, so that jet reaction forces tend to tighten the threaded connection. (Column 5, lines 1-10).

With regard to claim 3, Clemens et al. teaches the apparatus of claim 1 wherein the primary jet (52) is mounted for rotation with respect to the hollow tubular member (14). (Column 2, lines 21-26).

With regard to claim 5, Clemens et al. teaches the apparatus of claim 3 wherein the primary jet (52) is driven to rotate by fluid flow there through. (Column 2, lines 21-26).

With regard to claim 7, Clemens et al. teaches the apparatus of claim 3 wherein the primary jet (52) is driven to rotate by fluid flow through one or more inclined orifices (44). (Column 2, lines 31-37, and column 5, lines 1-10).

With regard to claim 8, Clemens et al. teaches an apparatus that can perform the steps therein. The reference teaches the steps of connecting a tubing string to a pressurized fluid source at the ground surface; running the string downhole; loosening and agitating undesirable material below the downhole end of the string with a primary flow of downwardly directed fluid; entraining and pulling the undesirable materials upward with a low pressure zone created above the primary flow source by an upwardly directed secondary gaseous flow, one and one-half to four times greater than the primary flow; and carrying the entrained materials to the surface with the combined primary and secondary fluid flows. (Figure 1).

With regard to claim 9, Clemens et al. discloses the method of claim 8 and further comprising the steps of rotating the downwardly directed primary jet flow. (Column 2, lines 21-26).

With regard to claims 10-12 the reference discloses the method of claim 8 wherein the fluid flow is gaseous in nature; liquid in nature; and of a gaseous liquid nature. (Column 4, lines 47-53).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

Claims 1-3, 5-9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hörger et al. (U.S. 5,992,432). Note figure 8, column 6, lines 14-43.

With regard to claim 1, Hörger et al. teaches an apparatus (1) comprising a hollow tubular member having first and second ends, the first end threaded for connection to the tubing string (4); at least one primary jet orifice (12), leading from the tubular member interior at the second end and directed toward the bottom of the well; and a plurality of secondary jet orifices (5) arranged around the exterior of the tubular member, leading from the tubular member interior and directed upwardly at an acute angle with respect to the longitudinal axis of the tubular member and skewed radially at an angle with respect to a radius of the tubular member surface, wherein the aggregate cross-sectional area of the secondary jet orifices is at least one and one-half times, but

not more than four times the aggregate cross-sectional area of the at least one primary jet orifice.

With regard to claim 2, Hörger et al. teaches the apparatus of claim 1 wherein the secondary jets (5) are skewed at an angle (α) opposed to the thread direction, so that jet reaction forces tend to tighten the threaded connection (4).

With regard to claim 3, Hörger et al. teaches the apparatus of claim 1 wherein the primary jet (12) is mounted for rotation with respect to the hollow tubular member (4). (Column 8, lines 60-67).

With regard to claim 5, Hörger et al. teaches the apparatus of claim 3 wherein the primary jet is driven to rotate by fluid flow therethrough. (Column 6, lines 14-20).

With regard to claim 6, Hörger et al. teaches the apparatus of claim 3 wherein the primary jet (12) is driven to rotate by fluid flow contacting inclined vanes (3).

With regard to claim 7, Hörger et al. teaches the apparatus of claim 3 wherein the primary jet (12) is driven to rotate by fluid flow through one or more inclined orifices (5).

With regard to claim 8, Hörger et al. teaches an apparatus that can perform the steps therein. The reference teaches the steps of connecting a tubing string to a pressurized fluid source at the ground surface; running the string downhole; loosening and agitating undesirable material below the downhole end of the string with a primary flow of downwardly directed fluid; entraining and pulling the undesirable materials upward with a low pressure zone created above the primary flow source by an upwardly directed secondary gaseous flow, one and one-half to four times greater than the

primary flow; and carrying the entrained materials to the surface with the combined primary and secondary fluid flows. (Figure 8, column 6, lines 14-43).

With regard to claim 9, Hörger et al. discloses the method of claim 8 and further comprising the steps of rotating the downwardly directed primary jet flow. (Column 8, lines 60-67).

With regard to claim 11, Hörger et al. discloses the method of claim 8 wherein the fluid flow is liquid in nature. (Column 6, lines 14-43)

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Jarchau et al. (U.S. 6,840,315). Note Figure 1, column 1, lines 5-37, and column 4, lines 50-56.

With regard to claim 1, Jarchau et al. discloses an apparatus (1) comprising a hollow tubular member (3) having first and second ends, the first end treaded for connection to the tubing string; at least one primary jet orifice (5), leading from the tubular member interior at the second end and directed toward the bottom of the well; and a plurality of secondary jet orifices (5, 6) arranged around the exterior of the tubular

member, leading from the tubular member interior and directed upwardly at an acute angle with respect to the longitudinal axis of the tubular member and skewed radially at an angle with respect to a radius of the tubular member surface (Column 4, lines 50-56), wherein the aggregate cross-sectional area of the secondary jet orifices is at least one and one-half times, but not more than four times, the aggregate cross-sectional area of the at least one primary jet orifice.

With regard to claim 2, Jarchau et al. discloses the apparatus of claim 1 wherein the secondary jets are skewed at an angle opposed to the thread direction, so that jet reaction forces tend to tighten the threaded connection. (Column 4, lines 50-56).

With regard to claim 3, Jarchau et al. discloses the apparatus of claim 1 wherein the primary jet is mounted for rotation (10) with respect to the hollow tubular member (3). (Column 4, lines 61-64).

With regard to claim 8, Jarchau et al. discloses an apparatus that can perform the steps therein. The reference discloses the steps of connecting a tubing string to a pressurized fluid source at the ground surface; running the string downhole; loosening and agitating undesirable material below the downhole end of the string with a primary flow of downwardly directed fluid; entraining and pulling the undesirable materials upward with a low pressure zone created above the primary flow source by an upwardly directed secondary gaseous flow, one and one-half to four times greater than the primary flow; and carrying the entrained materials to the surface with the combined primary and secondary fluid flows. Note Figure 1, column 1, lines 5-37, and column 4, lines 50-56.

With regard to claim 9, the reference discloses the method of claim 8 and further comprising the steps of rotating the downwardly directed primary jet flow. (Column 4, lines 61-64).

With regard to claims 10-12 the reference discloses the method of claim 8 wherein the fluid flow is gaseous in nature; liquid in nature; and of a gaseous liquid nature. The term "medium" (column 1, line 19; column 4, line 40) used in the reference is interpreted by the Examiner to include liquids, gases, and liquid-gas mixtures. (See Merriam-Webster's Collegiate Dictionary, Tenth Edition (1993) (defining "medium" as a substance regarded as the means of transmission of a force or effect)).

***Allowable Subject Matter***

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carmichael et al. (U.S. 6,453,996) teaches a cleanup tool that discharges jetting fluid for cleaning a well or well equipment. Flaherty et al. (U.S. 5,179,753) teaches a jet thruster for cleaning with a spinner head including jets that create forces that are utilized in cleaning. Davis (U.S. 3,744,723) teaches a pipe cleaning nozzle with a plurality of peripherally spaced fluid pressure jet ports, which diverge angularly rearward to assist in the forward movement of the nozzle and

rearward expulsion of solids removed from the pipe. Pletcher (U.S. 2,735,794) discloses a nozzle head with discharge ports oriented outwardly and rearwardly at angles, the position of which act to twist the nozzle during use. Shaddock (U.S. 4,819,314) teaches self-propelling jet nozzles for cleaning. Walker et al. (U.S. 6,607,607) teaches a method and apparatus for cleaning a borehole comprised of uphole directed jets directing fluid uphole and forward facing jets. Eslinger et al. (U.S. 6,173,771) teaches a downhole cleaning tool with comprised of milling elements, lower fluid jets, and a plurality of upper radial jets.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Letoria House whose telephone number is (571) 272-8118. The examiner can normally be reached on M-F, 7:00 A.M. - 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Bagnell
Supervisory Patent Examiner
Art Unit 3672

LGH